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Record

Sept. 28, 2001

Volume 26 No. 6



Washington University in St. Louis

Home Plate supports students

Scope broadened after Sept. 11 terrorist attacks

By NEIL SCHOENHERR

Going away to college is a time of great transition for many students. They are living on their own, most likely for the first time, and dealing with many new experiences.

But when going through a difficult time, as many Americans are in light of the recent terrorist attacks, being hundreds or even thousands of miles away from home and family may not be easy.

A new program on campus started by Risa Zwerling Wrighton, wife of Chancellor Mark S. Wrighton, aims to help ease some of the discomfort students may feel being far from home.

The "Home Plate" program

"... we worked with Risa to backtrack a bit and open Home Plate to all students."

MELANIE OSBORN

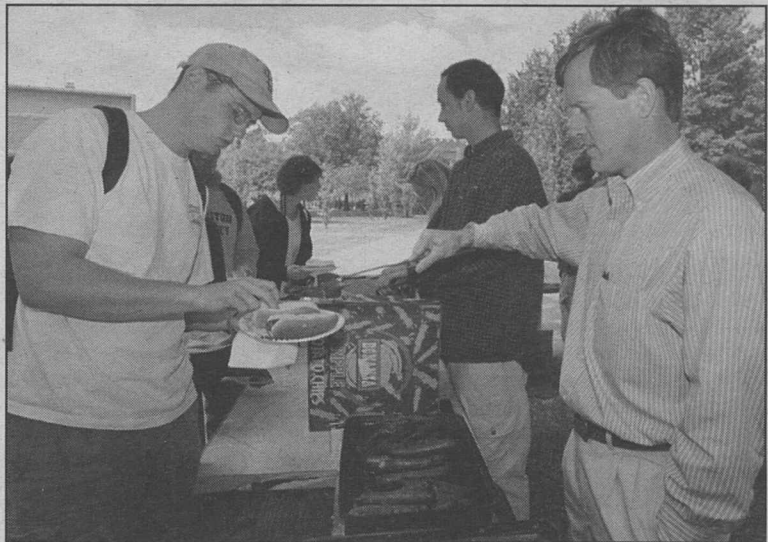
was originally aimed at helping freshmen adjust to the college life. But the program has changed since the recent tragedies, said Melanie Osborn, assistant director of new student orientation.

Osborn and health educator Stephanie Habif have been working closely with Zwerling Wrighton to help facilitate Home Plate.

"After what happened on Sept. 11, we worked with Risa to backtrack a bit and open Home Plate to all students," Osborn said. "When you go away to school, it's the little things that you never really thought about that you find yourself longing for. We want to help students find a family environment and provide them with the little touches of home they are missing."

Area families or couples can volunteer to serve as host families for students. Osborn said the idea is to have each family meet with their student at least three times a year for home-cooked meals and talk around the table.

A personal experience inspired Zwerling Wrighton to initiate Home Plate.



Relief efforts on campus continued last week. David Jolley (right), senior director of development for the School of Engineering and Applied Science, serves a hot dog to electrical engineering and business student Brian Schroeder at a Sept. 24 barbecue fundraiser that netted nearly \$1,500 for the New York Backstoppers.

"I am a mother of a college-aged daughter who had to deal with many adjustments in her freshmen year, one of which was

homesickness," Zwerling Wrighton said. "I remember being so glad when I learned that a professor

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Stephan Schindler, Ph.D., associate professor in the Department of Germanic Languages and Literatures in Arts & Sciences, relaxes with his dog, Miles, at his apartment in Danforth House. "Students can sign up to walk Miles if they'd like," Schindler said. "I think that gives them a sense of home."

Newest faculty family

The Schindlers move into Danforth House

By NEIL SCHOENHERR

Stephan Schindler, Ph.D., is known on the South 40 as the man with the garden.

Flowers, shrubs and vines creep from every corner of the porch at the apartment he shares with his wife, Mary, in Danforth House. Schindler, associate professor in the Department of Germanic Languages and Literatures in Arts & Sciences, admits to having somewhat of a green thumb.

"We bought a lot of plants," Schindler said. "We are going to plant 300 tulips this fall, and by next spring we might have a vegetable garden as well. We just love flowers. I think seeing the flowers reminds students of

their homes."

Besides his love for flowers, Schindler and his wife share a passion for connecting with students. Meet the South 40's newest faculty family — the Schindlers.

The Schindlers are the fourth faculty family in three years to accept the University's invitation to live rent-free on campus. They follow the Wyssession, Freeman and Gilbertson families, who located to the South 40 in 1998, 1999 and 2000, respectively. The faculty families' role is to help integrate academic and residential life.

"I have served on the Undergraduate Council for the last three years," Schindler said. "During that time, I also became the

director of undergraduate studies in the German department, so I have a professional link to explore the other side of education here, which takes place on the South 40."

Schindler has worked at the University for 10 years and has also taught courses in comparative literature and film studies, both in Arts & Sciences. The author of several books, Schindler's research interests include 18th- and 20th-century literature, gender studies, German film, Holocaust literature and cultural studies.

He was born and raised in a small village in the Rhineland in Germany and earned master's degrees in German, history and

See Schindlers, Page 6

Retirees' luncheon honors dedication, commitment

By JESSICA N. ROBERTS

"I've had some of my greatest memories at Washington University," said Karen Baker, a 20-year veteran of the Hilltop Campus. "From my early days with Harriet Switzer, Ralph Morrow and Gloria White, to my recent days with Ed Macias and Ann Prenatt, I've loved everyone. My wonderful colleagues have always been people who've supported me throughout the years."

Baker is ready to begin the next chapter of her life with gusto. Having relocated to the Lake of the Ozarks, Baker is volunteering at the local hospital and her church and has even taken on a part-time job at the large outlet mall by the lake.

Baker, former manager of faculty records, was one of 59 retirees from the Hilltop and Medical campuses honored Sept. 19 at the annual retirees' luncheon in the Whittemore House. Chancellor Mark S. Wrighton hosted the event, which was coordinated by Blanche M. Johnson, employee relations representative, and Prenatt, executive director of human resources.

Each retiree received a commemorative walnut plaque

signed by Wrighton.

Presenters included Shirley K. Baker, vice chancellor for information technology and dean of University Libraries; David T. Blasingame, vice chancellor of alumni and development programs; Michael R. Cannon, executive vice chancellor and general counsel; Edward S. Macias, Ph.D., executive vice chancellor and dean of Arts & Sciences; William A. Peck, M.D., executive vice chancellor for medical affairs and dean of the School of Medicine; and Richard A. Roloff, executive vice chancellor.

After a moment of silence for the victims of the Sept. 11 terrorist attacks, Wrighton praised the retirees for their service to the University.

"The people retiring today did a wonderful job for the institution and for its students," Wrighton said. "We are in your debt for the work you have done."

He added that he hoped the retirees would still continue to be active in the life of the University community through events and programs such as the Assembly Series and the Lifelong Learning Institute.

"We're grateful that you made the University so strong and so

See Retirees, Page 6



(From left) Doris Jeanne Gibbons, Marian Rita Halpin, Rosielee Neal and Marlene O'Brien receive flower baskets Sept. 19 at the annual retirees' luncheon in the Whittemore House.



High achievement (From left) Chancellor Mark S. Wrighton; Edward S. Macias, Ph.D., executive vice chancellor and dean of Arts & Sciences; Raymond E. Arvidson, Ph.D., the James S. McDonnell Distinguished University Professor and chair of the Department of Earth and Planetary Sciences in Arts & Sciences; Robert H. Waterston, M.D., Ph.D., the James S. McDonnell Professor and head of the Department of Genetics, director of the Genome Sequencing Center and professor of anatomy and neurobiology at the School of Medicine; and William A. Peck, M.D., executive vice chancellor for medical affairs and dean of the medical school, talk Sept. 19 at the third annual Faculty Achievement Awards Ceremony at the Eric P. Newman Education Center. Arvidson, winner of the Arthur Holly Compton Award for Faculty Achievement, and Waterston, winner of the Carl and Gerty Cori Award for Faculty Achievement, received framed citations and gave lectures on their respective fields of study at the event.

Disaster relief efforts continue around campus

The need for blood donations around the nation is still great. The University's third blood drive this year, co-sponsored by Alpha Phi Omega and Circle K, will be held Oct. 1-4 in Mallinckrodt Student Center and Wohl Student Center.

Donors can sign up in advance or just show up. For more information, contact Christy Kaiser (clkaiser@artsci.wustl.edu) or Nathalie de vos Burchart (schmuff_pup@hotmail.com).

Blood drive dates, times and locations are:

- **Oct. 1**, noon-5 p.m., Gargoyle, Mallinckrodt Center;
- **Oct. 2**, 4-8 p.m., Friedman Lounge, Wohl Center;

- **Oct. 3**, 4-8 p.m., Friedman Lounge, Wohl Center;
- **Oct. 4**, noon-5 p.m., Gargoyle, Mallinckrodt Center.

Future blood drives will be held Oct. 29-Nov. 1, Jan. 28-31, Feb. 25-28 and March 25-28.

For additional American Red Cross blood drive locations, call (800) GIVE-LIFE.

A weeklong fund-raising event run by the Olin School of Business' Graduate Business Student Association raised \$3,656 for the Red Cross' "September 11 Fund."

The traditional fall Walk In, Lay Down (WILD) will take on

an added component this year. It will be called WILDD — Walk In, Lay Down Donations — and will be a benefit concert to aid victims of the Sept. 11 tragedies. There will be no charge for the event, which runs from noon-10 p.m. today in Brookings Quadrangle.

Attendees are urged to make a donation, but it is not mandatory. WILDD will feature a raffle of gift certificates, signed merchandise from athletes and tickets to local attractions, as well as games, music and student activities.

All money donated will go to the Red Cross' "September 11 Fund."

Home Plate

Program aims to match students with families

— from Page 1

had invited (daughter) Anna to dinner and what a difference that small outreach made to her.

"So I decided that I would start a program at Washington

University to assist freshmen in their adjustment process by bringing a touch of home to them."

Osborn said Home Plate is great way for students to see the city.

"Home Plate provides a great opportunity for a St. Louis family to connect with the University community," Osborn said.

Zwerling Wrighton added, "I

think it is good for students to get off campus and make some connection to St. Louis so the city becomes more of a home in addition to the University."

A guideline sheet and application to the Home Plate program are available online at www.wustl.edu/students/undergrad/homeplate.html. For more information, contact Osborn at 935-8350 or Habif at 935-4095.

Human genome to be introduced to nonscientists

By ANN NICHOLSON

The School of Law's Center for Interdisciplinary Studies and the School of Medicine are hosting two lectures on the "Human Genome: The Fundamentals" from 3-5 p.m. Oct. 3 in the Bryan Cave Moot Courtroom in Anheuser-Busch Hall. A reception will follow in Room 320.

The lectures will kick off the yearlong program, "Law and the Human Genome Project: Research, Medicine and Commerce," which is being sponsored by both schools.

The two 50-minute lectures will be presented by medical school faculty Elaine R. Mardis, Ph.D., assistant professor in the Department of Genetics and

director of technology development for the Genome Sequencing Center, and John McPherson, Ph.D., assistant professor in the Department of Genetics and co-director of the Genome Sequencing Center.

The lectures, which are open to the University community, will introduce nonscientists to the Human Genome Project, its findings and its ramifications for medical science and practice. The lectures will cover fundamental concepts of modern genomics, principles of genetics and basic definitions.

For those unable to attend Oct. 3, the lectures will be repeated from 2-4 p.m. Nov. 15 in the Bryan Cave Moot Courtroom.

"The Human Genome Project: Expanding the Conversation," plenary conference, is slated for Jan. 28-29. Three related colloquia are scheduled for March 22, April 5 and tentatively April 12-13. Keynote speakers for the January conference include Francis S. Collins, M.D., Ph.D., director of the National Genome Institute; Susan M. Okin, Ph.D., Stanford University professor of ethics; Michael Traynor, J.D., president of the American Law Institute; and Nancy S. Wexler, Ph.D., professor of neuropsychology at Columbia University and president of the Hereditary Disease Foundation.

For more information, call 935-7988 or visit the Web site, ls.wustl.edu/centeris.

Throop Garage to close Oct. 5

Throop Garage, located off Forest Park Parkway on the east side of the Millbrook Square Apartments, will close at 12:30 p.m. Oct. 5 to make parking spaces available to those attending that day's dedication ceremony of the new Charles F. Knight Executive Education Center of the Olin School of Business.

To accommodate students, faculty and staff displaced by the closing of the garage, the University will offer a free shuttle service from the West Campus parking lot and the Brookings Hall parking lot. The shuttle stops will

be located near the corner of Forsyth Boulevard and Jackson Avenue, and at the Brookings Hall steps.

In addition, all orange permit holders who normally park in Lot No. 4 should park in the Muny's upper parking lot in Forest Park. A shuttle stop will be located on the upper level of the lot to bring those people to campus.

Shuttles will run from each location every 15 minutes from 7:30 a.m.-8 p.m. and will drop off passengers at the rear of the Anheuser-Busch Hall.

Campus Security Report available online by Oct. 1

Washington University is committed to assisting all members of the University community in providing for their own safety and security.

Information about safety and security, including the annual report required by the Campus Security Act, will be available on the University's Web site by Oct. 1.

The annual report includes information on campus crime statistics, security, law enforcement, crime alerts, data collection, alcohol and drug policies, sexual assault, and crime prevention.

The report for the Hilltop

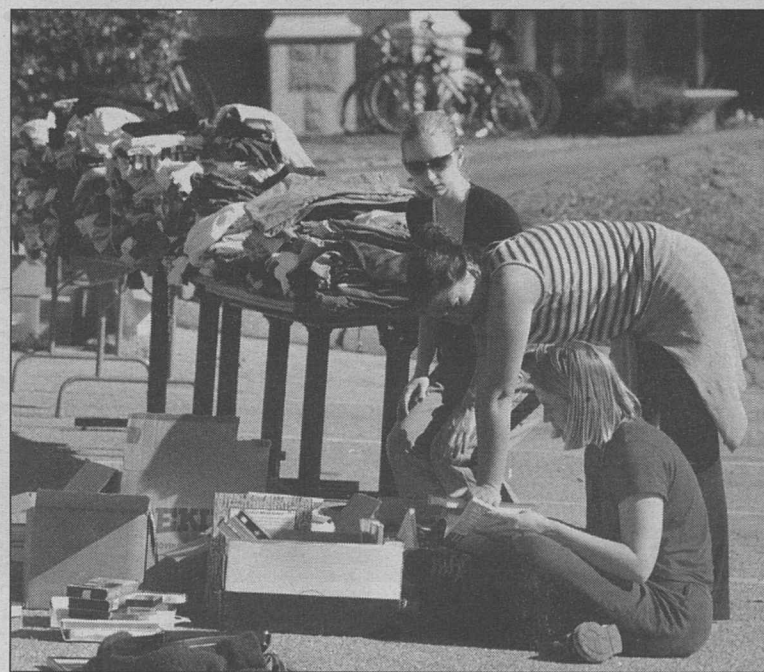
Campus and off-campus properties is available at police.wustl.edu; copies of the brochure "Safety and Security 2001-2002" have been sent to all current Hilltop employees. The brochure and printouts of the statistical report of campus crime are also available from the police department office on the South 40 or by calling 935-7698.

The report for the Medical Campus is available at medschool.wustl.edu/~fmd/proserv.htm; printouts of the report are available from School of Medicine Protective Services, 4504 Scott Ave.; 362-4814.

Interfaith gathering

Dar al-Islam, a mosque at 517 Weidman Road in west St. Louis County, will host an interfaith gathering from 3-5 p.m. Sept. 30 to commemorate those who perished in the tragic events of Sept. 11 and to strengthen ties between Jews, Christians and Muslims. Imam Nur Mohammad Abdallah, Rabbi Susan Talve and Rabbi Jeffrey Stiffman are among the participating religious leaders.

The event was initiated by Rebecca Copeland, Ph.D., and Fatemeh Keshavarz, Ph.D., both associate professors in the Department of Asian & Near Eastern Languages and Literatures in Arts & Sciences. The gathering is open to the public and co-sponsored by the University's Religious Studies Program and Jewish, Islamic & Near Eastern Studies, both in Arts & Sciences. For more information, call 935-8677.



(From left) First-year law students Sarah Hale and Kati Miller, and Amanda Sheffield, wife of a first-year student, look over items at the National Association for Public Interest Law garage sale held Sept. 22 in front of Anheuser-Busch Hall. The students donated \$350 from the sale and from donations to the Red Cross and United Way for disaster relief following the Sept. 11 tragedies.

Record

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Washington University in St. Louis

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Medical School Update

Investigational drug enables earlier hospital discharge

By JIM DRYDEN

A team of researchers led by anesthesiologists at the School of Medicine has found that an investigational drug helps patients recover bowel function more quickly after abdominal surgery, leading to less post-operative illness and quicker discharge from the hospital.

The researchers say the drug, ADL 8-2698, blocks the actions of morphine and other opioids in the intestines without inhibiting their ability to relieve pain. The finding is reported in this week's New England Journal of Medicine.

"Return of bowel function is one of the key indicators of recovery following surgery," said principal investigator Andrea Kurz, M.D., assistant professor and director of the Division of Clinical Research in the Department of Anesthesiology at the medical school as well as associate director of the Outcomes Research Institute, an international group of researchers.

"One of the ways that we know a person is about ready to go home is that they pass gas, and that indicates their bowel function is returning to normal."

Drugs such as morphine and other opioids are very good at relieving post-operative pain, but they also act on opioid receptors in the gut, blocking normal gastrointestinal function. Kurz found that ADL 8-2698 kept the opioids from affecting those receptors without blocking the beneficial pain-relieving actions of the drug in the brain.

The investigators studied 78 patients undergoing abdominal surgery — either colectomy or hysterectomy — and divided the patients into three groups of 26. One group received an inactive placebo. The second study group received a 1-milligram dose of ADL 8-2698, and the third group got a 6-milligram dose of the investigational drug. All three groups received identical-looking capsules two hours before surgery and again twice daily until they

either had a full return of bowel function or were discharged from the hospital.

Patients who received 6 milligrams of ADL 8-2698 reported no greater pain and did not receive more pain medication, but they did have much quicker recovery of bowel function. Those who received 1 milligram of ADL 8-2698 had smaller, less significant improvements.

The median length of time before first flatus decreased from 70 hours in the placebo group to 49 hours in the group that got 6-milligram doses of the drug. Time to first bowel movement declined from 111 hours to 70. And the time at which patients were deemed ready for discharge decreased from 91 hours in the placebo group to 68 hours in the 6-milligram group.

"A big advantage of this drug is that it's poorly absorbed," Kurz said. "It acts selectively on the periphery — the bowel in this case — without crossing into the blood stream and subsequently into the brain. There are many drugs that antagonize

opioids, but most of them also cross into the brain, too. That limits the analgesic effects of the opioids, and patients end up having pain."

Patients who received the 6-milligram dose of the drug also had significant decreases in nausea and vomiting in the hours and days after surgery. And because patients who were given the drug were ready to go home sooner, it follows that the drug has the potential to lower health-care costs.

"We did not evaluate cost-effectiveness in this particular study, but showing that most patients are discharged about a day earlier would suggest that the cost savings are substantial," Kurz said.

Kurz and her colleagues continue to study the drug in abdominal surgery patients, hoping to fine-tune the dosage at which the drug will work most effectively. They also hope to study its actions in patients undergoing other types of surgery.

"We did not evaluate cost-effectiveness in this particular study, but showing that most patients are discharged about a day earlier would suggest that the cost savings are substantial."

ANDREA KURZ

Drug abuse program seeks fellows

By JIM DRYDEN

Researchers at the School of Medicine have received a major federal grant to help train more scientists to investigate the factors that contribute to alcohol, drug and nicotine dependence and abuse.

Neuroscientist Theodore J. Cicero, Ph.D., vice chancellor for research and professor of neuropharmacology in psychiatry, has received a five-year, \$2.2 million grant from the National Institute on Drug Abuse to direct a multidisciplinary training program in drug abuse. The grant renews a training program that has been under way at the medical school for more than a decade.

In the program, eight post-doctoral fellows receive two to three years of training in one of several areas. The training program places a special emphasis on providing research training for physicians because of the national shortage of badly needed clinical researchers.

"The fellows can choose to

specialize in the neurobiology of drug abuse, the molecular and cellular mechanisms involved, cognitive neuroscience or in several genetic approaches that can help us better understand the problem of drug abuse," Cicero said. "In addition, we encourage the fellows to familiarize themselves not only with their particular specialty but also to delve into at least one other area of drug abuse research. This helps to foster multidisciplinary research among the fellows."

In addition to medicine, fellows admitted to the program come from diverse backgrounds, including psychology, psychiatry, endocrinology, mathematics, economics, anthropology, sociology, social work and neuroscience. They are linked to research mentors who study one or more aspects of substance abuse.

Interested individuals from all departments at the University are encouraged to apply by contacting Cicero at 362-7010.

The grant will fund the training program through June 2006.



Future physicians Medical student and conference co-coordinator Rita Kwan talks with Rob Levy, legislative director of the American Medical Student Association (AMSA) at the Eric P. Newman Education Center Sept. 22. Students from the School of Medicine and other medical schools in the Midwest reflected on the recent terrorist tragedies at AMSA's annual regional meeting. Through lectures and workshops, they discussed a variety of topics, including their role as aspiring physicians in a country facing the prospect of war and human rights abuses in Afghanistan. Students at the conference also honored Paul Ambrose, M.D., a former AMSA legislative director who died Sept. 11 on American Airlines Flight 77.

Longer Life Center to present research findings

By JIM DRYDEN

University faculty will gather Oct. 3 at 2:45 p.m. at the Eric P. Newman Education Center to discuss several research projects funded by the Longer Life Foundation. The foundation's activities are coordinated on campus through the Longer Life Center in the School of Medicine's Division of Health Behavior Research.

The Longer Life Foundation is a cooperative effort between the medical school and the Reinsurance Group of America. It funds independent research into the effects of changing medical and public-health practices on human longevity, quality of life and rates of disease in specific populations.

Over the last three years, the foundation has sponsored nearly \$700,000 in grants to University faculty. The foundation's board of governors includes William A. Peck, M.D., executive vice chancellor

for medical affairs and dean of the medical school.

Researchers who will present their findings at the meeting include Nancy Morrow-Howell, Ph.D., associate professor of social work in the George Warren Brown School of Social Work. She has studied how participating in productive activities affects the physical and mental health and life satisfaction of elderly people.

Mario Schootman, Ph.D., assistant professor of medicine, will report on differences in breast cancer screening and mortality rates between rural and urban women and among various ethnic groups.

There also will be presentations on diabetes research. One, from Thomas E. Burroughs, Ph.D., adjunct assistant professor of medicine, looks at communication between patient and doctor during office visits and whether enhancing communication leads to enhanced care and quality of life. Another

diabetes study uses peer coaches to improve disease management. Kathleen Tarr, Ph.D., former post-doctoral fellow in the Division of Health Behavior Research, is that study's lead investigator.

In addition, Jay F. Piccirillo, M.D., associate professor of otolaryngology, will report on a computer program that refines estimates of life expectancy in cancer patients by considering the impact of other medical conditions on survival and quality of life.

Others will present posters about ongoing research projects involving atrial fibrillation, suicide and heart disease survival rates. And Kerry Kornfeld, M.D., Ph.D., assistant professor of molecular biology and pharmacology, will deliver the program's keynote address on genetics and lifespan.

For more information, call 286-1900.

Spread of West Nile Virus tracked by researchers

By DARRELL E. WARD

The arrival of the West Nile Virus in the United States — and now the Midwest — presents a rare opportunity to study how viruses can spread across the nation from a single, well-defined location, according to Henry V. Huang, Ph.D., associate professor of molecular microbiology at the School of Medicine. Huang has closely followed the dispersal, detection and surveillance of West Nile Virus.

"The introduction of West Nile Virus into the United States is a unique experiment," Huang said. "Usually when public-health officials identify a new virus in a country, the virus already is widely dispersed. It's rare to have an opportunity to follow the spread of a virus from a point source. So we can use this to raise questions about how we track the spread of a microbe and identify the factors involved in its spread."

Exploring such questions would help scientists plan for future outbreaks of new viruses.

"The spread of West Nile Virus is a lesson and an opportunity to improve our public-health



Huang



Diamond

surveillance systems and disease preparedness," Huang said.

The West Nile Virus, which first entered the United States in 1999, causes illness in only a small number of people who become infected by it.

"But that could change in the future if the virus adapts to mosquitoes that prefer to bite humans more than birds," said Michael Diamond, M.D., Ph.D., assistant professor of medicine, molecular microbiology, pathology and immunology.

"At present, West Nile Virus is a major problem for wild birds and potentially a problem for livestock," Diamond said. "It affects horses in particular, causing them to sicken and die. We don't know yet how it will affect other kinds of livestock as it

moves across the country."

Humans are only an incidental host for the West Nile Virus, which is spread when a mosquito bites an infected bird, then a human. Of those infected, about 1 percent requires hospitalization, and about 5 to 10 percent of people who are hospitalized die of the disease.

"This virus is capable of rapid evolution, and it's filling a new ecological niche," Diamond said. "West Nile Virus has never had contact with the birds and mosquitoes in the Americas, and if it were to adapt to a species of mosquito that regularly bites humans, the number of human cases could rise. We also don't know what may happen when the virus moves down through Central and South America and comes into contact with human populations there."

Diamond studies the pathogenesis of West Nile Virus infection and how the immune system combats the virus.

"By understanding how the immune system limits infection, we hope to begin understanding why certain people may be at greater risk for disease," he said.

University Events

'Charlie Victor Romeo' Oct. 5-6 launches OVATIONS! Series

BY LIAM OTTEN

"Charlie Victor Romeo," a theatrical documentary based on the "black-box" recordings of actual in-flight emergencies, will launch Edison Theatre's 2001-02 OVATIONS! Series with a pair of performances Oct. 5-6.

Created by actors/performers Bob Berger, Patrick Daniels and Irving Gregory, "Charlie Victor Romeo" (the title refers to cockpit voice recordings, or CVRs) is derived entirely from six real-life accidents, the transcripts of which were obtained from the National Transportation Safety Board. Each segment is introduced by a slide detailing basic flight information, the number of passengers on board and the probable cause for the incident, whether mechanical failure, pilot error or "act of God." A second slide at the end of each scene reports the incident's outcome.

The performance is especially poignant in light of the Sept. 11 terrorist attacks on the World Trade Center and the Pentagon. A post-performance discussion will be held among the artists, audience and counseling professionals to allow an opportunity for

OVATIONS!

What: "Charlie Victor Romeo" (interpreted for the deaf and hard of hearing)

Where: Edison Theatre

When: 8 p.m. Oct. 5-6

Tickets: \$25, available at Edison Theatre Box Office, 935-6543, or MetroTix, 534-1111

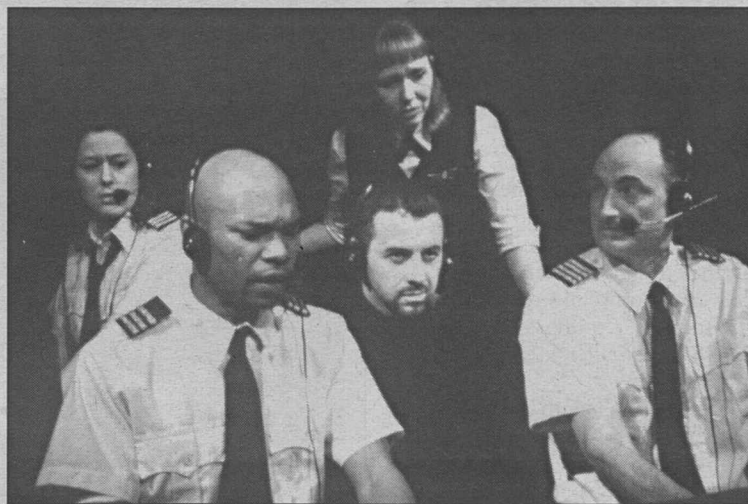
Sponsor: Edison Theatre OVATIONS! Series

For more information, call 935-6543.

conversations about the work and the issues it addresses, said Edison Theatre Managing Director Charlie Robin.

"After much consideration, other University administrators and I decided it's important to move forward, and in that, to also provide us, as a community, with an opportunity to come together to talk about what has happened and how it's affecting us," Robin said.

"And most specifically, the arts provide a medium for expression that helps us define who we are, both in our experiences and in our ideals. We need that more than ever now."



"Charlie Victor Romeo" will launch Edison Theatre's 2001-02 OVATIONS! Series with a pair of performances Oct. 5-6.

Far from Hollywood sensationalism, "Charlie Victor Romeo" is a portrait of crisis psychology that realistically conveys the stress and confusion of pilots struggling — both mentally and physically — to save their crafts, cataloging both best- and worst-case scenarios. The captain of a 1996 Aeroperu flight, for example, seems dangerously dismissive of warnings from his co-pilot, while the crew of a 1989 United Airlines flight seems the very model of

pure professional tenacity, successfully wrangling an out-of-control DC-10 to the ground.

The sparse set reproduces the forward nose of a passenger airliner, complete with pilots' seats and engineer's console. The seven-member cast — led by Berger, Daniels and Gregory — variously appear as pilots, co-pilots and flight attendants.

The six incidents detailed are: Aeroperu Flight 603, Lima, Peru, Oct. 2, 1996; American Eagle

4184, Roselawn, Ind., Oct. 31, 1994; American Airlines Flight 1572, East Granby, Conn., Nov. 12, 1995; Japan Airlines Flight 123, Mount Osutaka, Japan, Aug. 12, 1985; United Airlines Flight 232, Sioux City, Iowa, July 19, 1989; and USAF Yukla 27, Elmendorf Air Force Base, Alaska, Sept. 22, 1995. A total of 793 lives were lost in these accidents.

"Charlie Victor Romeo" has been embraced by audiences and the aviation community alike. The show premiered in 1999 at New York's Collective: Unconscious Theatre, selling out an eight-month run and winning two 2000 Drama Desk Awards, including Best Unique Theatrical Experience.

The show has been featured at airline conventions and medical training seminars nationwide; was filmed by the U.S. Air Force as a training video for pilots; and has become required viewing for West Point cadets studying engineering psychology and human error.

Shows begin at 8 p.m. Tickets are \$25 and are available at the Edison Theatre Box Office, 935-6543, and through all MetroTix outlets, 534-1111.

For subscription discounts or more information, call 935-6543.

Hide and Seek • Gain the Upper Hand • The Real Erin Brockovich

"University Events" lists a portion of the activities taking place at Washington University Sept. 28 - Oct. 10. Visit the Web for expanded calendars for the School of Medicine (medschool.wustl.edu/events/) and the Hilltop Campus (cf6000.wustl.edu/calendar/events/).

and Seek." Room 219 Ridgley Hall. 935-5156.

Monday, Oct. 8

6 p.m. Chinese Film Series. "Yi Yi (A One and a Two)." Room 219 Ridgley Hall. 935-5156.

Wednesday, Oct. 10

7 p.m. Japanese Film Series. "Kiku." Room 219 Ridgley Hall. 935-5156.

Lectures

Friday, Sept. 28

9:15 a.m. Pediatric Grand Rounds. "The Expanding Spectrum of the 22q11 Microdeletion Syndrome." Katherine Grange, assoc. prof. of pediatrics, medical genetics div. Clopton Aud., 4950 Children's Place. 454-6006.

Noon. Program in Physical Therapy symposium. Steve J. Rose Symposium. "Mechanical Factors Contributing to Low Back Injury." Stuart McGill, prof. of Kinesiology, U. of Waterloo, Canada; and Matthew J. Silva, asst. prof. of orthopaedic surgery. Cost: \$25 (includes lunch). Room B112, 4444 Forest Park Blvd. To register, call 286-1410.

Monday, Oct. 1

Noon. Molecular biology and pharmacol-

ogy research seminar. "Development and Plasticity of the Cerebral Cortex: The Whisker/Barrel Map in Rodents." Thomas A. Woolsey, prof. of neurology and neurological surgery; of anatomy and neurobiology; and of cell biology and physiology. Room 3907 South Bldg. 362-2725.

4 p.m. Biology seminar. "Genetics Analysis of Plant-pathogen Interactions: How Does the Pathogen Gain the Upper Hand?" Barbara Kunkel, asst. prof. of biology. Room 322 Rebstock Hall. 935-6850.

4 p.m. Immunology Research Seminar Series. "Regulation of Autoimmune Diabetes Development." Osami Kanagawa, research assoc. prof. of medicine and assoc. prof. of pathology and immunology. Eric P. Newman Education Center. 362-2763.

6:15 p.m. Germanic Languages and Literatures lecture. "Verdinglichung und Objektivierung. Zur Form des Erzählens in Bertold Brechts 'Dreigroschenroman.'" Klaus-Detlef Müller, prof. of German literature, U. of Tübingen, Germany. Hurst Lounge, Room 201 Duncker Hall. 935-4360.

7 p.m. Architecture Monday Night Lecture Series. Cannon Group Lecture in Architecture. Steven Holl, architect, Steven Holl Architects, New York, N.Y. Steinberg Hall Aud. (reception 6:30 p.m., Givens Hall). 935-6293.

Tuesday, Oct. 2

Noon. Molecular Microbiology and Microbial Pathogenesis Seminar Series.

"Supervisory Microbiologist Measles Virus Section." Paul Rota, supervisory microbiologist, measles virus section, Centers for Disease Control and Prevention, Atlanta. Cori Aud., 4565 McKinley Ave. 362-2755.

12:05-12:55 p.m. Physical therapy research seminar. "New Approaches for Disability Determination." Leonard N. Matheson, asst. prof. in occupational therapy. Rooms B108 and B109, 4444 Forest Park Blvd. 286-1404.

3 p.m. Anesthesiology research seminar. "Proteomics and the Diagnosis of Prion Diseases." Kelvin Lee, asst. prof. of chemical engineering, Cornell U. Room 5550 Clinical Sciences Research Bldg. 362-8560.

4 p.m. Biology lecture. The Viktor Hamburger Lecture. "Brain Waves and Immune Genes in Brain Wiring." Carla Shatz, neurobiology dept., Harvard Medical School. Room 215 Rebstock Hall. 935-6860.

4 p.m. Public Interest Law Speakers Series. "Markets and Mindwork: Is Competition Harming the Practice of Law (and Other Intellectual Pursuits)?" Derek C. Bok, the 300th Anniversary U. Prof., president emeritus and former law dean, Harvard U. Anheuser-Busch Hall. 935-4958.

Wednesday, Oct. 3

8 a.m. Obstetrics and Gynecology Grand Rounds. "An Update on the Diagnosis and Treatment of Osteoporosis." Kathryn M. Diemer, asst. prof. of internal medicine and asst. dean for career counseling, bone and mineral metabolism div. Schwarz Aud., first floor, Maternity Bldg. 362-1026.

11 a.m. Assembly Series. Henry Cisneros, Former Secretary of Housing and Urban Development. Graham Chapel. 935-5285.

1:15 p.m. Ethical conduct of research seminar (Hilltop). Co-sponsored by psychiatry dept. and Comorbidity and Addictions Center. East Pavilion Aud., Barnes-Jewish Hosp. Bldg. 935-6128.

3 p.m. Law and Medicine lecture. "Human Genome: The Fundamentals." Elaine R. Mardis, asst. prof. of genetics and dir., technology development, Genome Sequencing Center; and John McPherson, asst. prof. of genetics and co-dir., Genome Sequencing Center. Co-sponsored by Law's Center for Interdisciplinary Studies and School of Medicine. Bryan Cave Moot Courtroom, Anheuser-Busch Hall (reception following, Room 320). 935-7988.

3:45 Physics colloquium. "Flying Through a Superfluid." Michael Stone, prof. of physics, U. of Ill., Urbana-Champaign. Room 204 Crow Hall (coffee 3:30 p.m., Room 241 Compton Hall). 935-6276.

4:15 p.m. Biochemistry and molecular biophysics seminar. "Interplay of Protein Dynamics With Structural Stability and Ligand Binding." Martin J. Stone, asst. prof. of chemistry, Ind. U., Bloomington. Cori Aud., 4565 McKinley Ave. 362-0261.

Thursday, Oct. 4

11 a.m. Pulmonary and Critical Care Medicine Grand Rounds. "Pulmonary Thromboembolic Disease: The Role of Interventional Radiology." Daniel B. Brown, asst. prof. of radiology and of surgery, East Pavilion Aud., Barnes-Jewish Hosp. Bldg. 362-6904.

Noon-1 p.m. Genetics seminar. "The Genetics and Epigenetics of Developmentally Regulated DNA Rearrangements of *Tetrahymena thermophila*." Doug Chalker, biology dept. Room 823 McDonnell Medical Sciences Bldg. 362-2062.

4 p.m. Mycology Research Club lecture. "Use of dsRNA Interference to Suppress Gene Expression in *Cryptococcus neoformans*." Tricia Cottrell, Doering lab., Washington U. School of Medicine. "Nuclear-mitochondrial Interactions in *Neurospora*." Jack Kennell, Kennell lab., Saint Louis U. Room 775 McDonnell Medical Sciences Bldg. 362-5997.

4 p.m. Vision Science Seminar Series. "The Near Death Experience: Apoptosis and Organelle Breakdown in the Developing Lens." Steven Bassnett, asst. prof. of ophthalmology and visual sciences and of cell biology and physiology. East Pavilion Aud., Barnes-Jewish Hosp. Bldg. 362-4288.

4:15 p.m. Earth and planetary sciences colloquium. Robert Duncan, prof., College of Oceanic and Atmospheric Sciences, Oregon State U., Corvallis. Room 361 McDonnell Hall. 935-5610.

Friday, Oct. 5

9 a.m. Public Interest Law Speakers Series. "A Conversation With the Real Erin Brockovich." Erin Brockovich, dir. of environmental research, Masry and Vittoe law firm. Anheuser-Busch Hall. 935-4958.

Noon. Cell biology and physiology seminar. "How the Actin Cytoskeleton Polarizes Growth and Segregates Organelles During the Cell Cycle Budding Yeast." Anthony Bretscher, molecular biology and genetics dept., Cornell U. Room 426 McDonnell Medical Sciences Bldg. 362-3964.

Sunday, Oct. 7

1 p.m. Law school constitutional conference. Jerome W. Sidel Memorial Lecture. "Faith-based Initiatives: Eroding the Wall Between Church and State?" David N. Saperstein, dir. and counsel, Religious Action Center of Reform Judaism. Bryan Cave Moot Courtroom, Anheuser-Busch Hall. 935-5505.

Monday, Oct. 8

10 a.m. Center for Mental Health Services Research seminar. "Improving Services for Substance Abusers With Depression."

Exhibitions

"Al Parker: Innovator in American Illustration." Through Oct. 5. WU Special Collections, fifth floor, Olin Library. 935-5495.

"Relative Perspectives: A Retrospective of the Architecture, Illustration, Jewelry Design and Painting from 1925-2001 of One St. Louis Family." The Shank family. Oct. 5 through Oct. 28 (reception 6-8 p.m., Oct. 5). Des Lee Gallery, 1627 Washington Blvd. 621-8735.

Film

Monday, Oct. 1

6 p.m. Chinese Film Series. "Eat a Bowl of Tea." Room 219 Ridgley Hall. 935-5156.

Thursday, Oct. 4

6 p.m. Near Eastern Film Series. "Hide

Former HUD secretary Cisneros to speak for Assembly Series

BY KURT MUELLER

Henry Cisneros, a former secretary of the U.S. Department of Housing and Urban Development (HUD), will speak at 11 a.m. Oct. 3 in Graham Chapel for the Assembly Series.

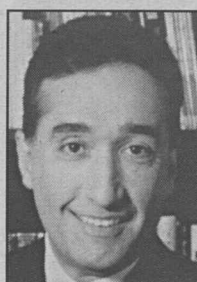
Cisneros is chairman and chief executive officer of American City Vista — a Cisneros Communities Venture formed jointly in August 2000 with the Kaufman and Broad Home Corp. His company markets properties as competitively priced "villages within cities," providing new residential options for buyers of various backgrounds and incomes. The homes are designed to honor local traditions and are wired for technology.

Before this venture, Cisneros was president and chief operating officer of Univision Communications, a Spanish-language

network, from 1997-2000.

Before joining Univision, Cisneros served as HUD secretary from 1993-97, where he was credited with initiating a major revitalization of many public housing developments and with formulating policies that have contributed to today's record homeownership rate. Before joining the Cabinet, he was chairman of Cisneros Asset Management, a fixed-income money-management firm.

The first Mexican-American mayor of a major American city, Cisneros served San Antonio for four terms from 1981-89. Cisneros helped rebuild the city's economic base and created jobs



Assembly Series

Who: Former HUD secretary Henry Cisneros

Where: Graham Chapel

When: 11 a.m. Oct. 3

Admission: Free and open to the public

through infrastructure and downtown improvements.

Cisneros holds bachelor's and master's degrees in urban and regional planning from Texas A&M University. He earned a master's in public administration from Harvard University and a doctorate in public administration from George Washington University.

All Assembly Series lectures are free and open to the public. For more information, call 935-5285 or visit the Assembly Series Web site, wupa.wustl.edu/assembly.



Scrap Arts Music will inaugurate Edison Theatre's newly revived "ovations! for young people" series with an Oct. 6 concert. The Vancouver-based percussion ensemble performs on instruments built from recycled and salvaged materials.

Scrap Arts Music launches 'ovations! for young people' series

By LIAM OTTEN

Scrap Arts Music, a Vancouver-based percussion ensemble that performs on instruments built from recycled and salvaged materials, will inaugurate the Edison Theatre's newly revived "ovations! for young people" series with an Oct. 6 concert. The one-time-only matinee performance begins at 11 a.m.

Scrap Arts Music is the brainchild of composer and inventor Gregory Kozak, who concocts the group's Dr. Seuss-like instruments — "creatures," as he terms them — from an eclectic array of industrially produced "junk." Discarded sewer pipes, old artillery casings and giant steel springs (rescued from a derelict playground ride) are transformed into gongs, xylophones, steel drums and other startlingly well-tuned apparatus. A treat for both the ears and the eyes, Kozak's elegantly ramshackle creations

Scrap Arts Music

What: 'ovations! for young people' concert

Where: Edison Theatre

When: 11 a.m. Oct. 6

Tickets: \$7, available at Edison Theatre Box Office, 935-6543, or MetroTix, 534-1111.

For more information, call 935-6543.

take the stage like a futuristic combination of alien machinery, tribal artifact and mythical animal.

As a performer, Kozak heads a team of five extraordinarily athletic percussionists through an energetic, highly choreographed show that is equal parts drumming, theater and dance. Whether performing original works like

"Synthesoid Plasmatron" and "Engine of the Future" or making up a new song on the spot, the Scrap Arts Music's repertoire fuses world and pop music sensibilities with utterly unpredictable 21st-century sounds.

Formed in 1999, the ensemble has performed at theatres and festivals throughout the United States and Canada. In addition to Kozak, the men and women of Scrap Arts include Scott Bishop, Sarka Kocicka, Malcolm Shoolbraid and Rahim Gaidhar.

"Ovations! for young people" presents affordably priced matinee performances by nationally recognized — and family friendly — performing artists. The series compliments the Edison Theatre's OVATIONS! Series.

Scrap Arts Music tickets are \$7 and are available at the Edison Theatre Box Office, 935-6543, and through all MetroTix outlets, 534-1111. For subscription discounts or more information, call 935-6543.

Holl, named 'America's Best Architect' by Time, to speak Oct. 1

By LIAM OTTEN

Steven Holl, recently named "America's Best Architect" by Time magazine, will present the 2001 Cannon Design Lecture for the School of Architecture at 7 p.m. Oct. 1 in Steinberg Auditorium.

The lecture is free and open to the public. A reception for Holl will be held at 6:30 p.m. in Givens Hall.

Holl is currently developing the \$80 million renovation and

expansion to the Nelson Atkins Museum of Art in Kansas City, Mo. His boldly chiseled designs put a premium on structural inventiveness and innovation. Early projects include the Pace Collection Showroom, New York (1986), and the American Memorial Library, Berlin (1988).

In 1993, he won an open competition to design the Helsinki Museum of Contemporary Art, Finland, which was

completed in 1998. Juhani Pallasma, currently the School of Architecture's Raymond E. Maritz Visiting Professor, served as associate architect on the project.

Holl's visit is co-sponsored by the School of Architecture and Cannon Design, an international architectural, engineering and planning firm.

For more information or to request a season brochure, call 935-6293.

Wilson M. Compton III, assoc. prof. of psychiatry. Room 38 Goldfarb Hall. 935-5687.

Noon-1 p.m. Work, Families and Public Policy Brown Bag Seminar Series. "Employing Low-skilled Men: Resolving the Debate on Marriage and Marriageability in Legislation on Fathers and Families." Ronald B. Mincy, Columbia U. Room 300 Eliot Hall. 935-4918.

4 p.m. Immunology Research Seminar Series. "Airway Immunology and the Art of Mucosal Maintenance." Michael J. Holtzman, the Selma and Herman Seldin Prof. of Medicine, pulmonary and critical care div.; and prof. of cell biology and physiology. Eric P. Newman Education Center. 362-2763.

5:30 p.m. Mallinckrodt Inst. of Radiology lecture. Annual Wendell G. Scott Memorial Lecture. "Radiology in the Post-genome Era: New Frontiers in Molecular Imaging." David R. Pivnick-Worms, prof. of radiology and of molecular biology and pharmacology. Scarpellino Aud., first floor, 510 S. Kingshighway Blvd. 362-2866.

Tuesday, Oct. 9

Noon. Molecular Microbiology and Microbial Pathogenesis Seminar Series. "Searching for a Functional Proteasome in Trypanosomes." C. C. Wang, prof. of pharmaceutical chemistry, U. of Calif., San Francisco. Cori Aud., 4565 McKinley Ave. 362-7180.

4 p.m. Anesthesiology research seminar. "Genetics and Circuitry of Pain in the Fruitfly, Drosophila." Dan Tracey, postdoctoral scholar, Calif. Inst. of

Technology. Room 5550 Clinical Sciences Research Bldg. 362-8560.

7 p.m. Architecture lecture. Dan Hoffmann, prof. of architecture, Ariz. State U., Tempe. Steinberg Hall Aud. 935-6293.

Wednesday, Oct. 10

8 a.m. Obstetrics and Gynecology Grand Rounds. "Ovulation Induction Agents: Use and Risks." Yvonne Wolny, chief resident, obstetrics and gynecology dept. Schwarz Aud., first floor, Maternity Bldg. 362-1016.

11 a.m. Assembly Series. Olin Conference Lecture. Wendy Chan, prof. of criminology, Simon Fraser U., Burnaby, British Columbia and author. Graham Chapel. 935-5285.

11 a.m. Public Interest Law Speakers Series. "Social Change, Judicial Activism and the Public Interest Lawyer." Thelton Henderson, judge, U.S. District Court, Northern Calif. Anheuser-Busch Hall. 935-4958.

Noon. Orthopaedic research seminar. "FGF and FGF Receptor Signaling in Skeletal Development." David M. Ornitz, prof. of molecular biology and pharmacology. J. Albert Key Library, Room 11300 West Pavilion, Barnes-Jewish Hosp. 454-7800.

Music

Friday, Oct. 5

8 p.m. Acoustic City Concert Series. Ellis

Paul and Susan Werner, CD release party. Cost: \$15 (free for WU students, faculty and staff). Steinberg Hall Aud. 935-7576.

Wednesday, Oct. 10

8 p.m. WU Jazz Band concert. Chris Becker, dir. Holmes Lounge, Ridgley Hall. 935-4841.

On Stage

Friday, Oct. 5

8 p.m. OVATIONS! Series. "Charlie Victor Romeo." Cost: \$25. (Also Oct. 6, same time.) Edison Theatre. 935-6543.

Saturday, Oct. 6

11 a.m. "ovations! for young people" concert. Scrap Arts Music, percussion ensemble. Cost: \$7. Edison Theatre. 935-6543.

Sports

Saturday, Sept. 29

10 a.m. Men's soccer vs. Case Western Reserve U., Cleveland. Francis Field. 935-5220.

Sports

Football stays hot, now 4-0 with 17-7 win

The Bears, ranked 24th in the latest American Football Coaches Association poll, forced four turnovers on the way to a 17-7 home win over No. 15 Albion College Sept. 22. Albion had been averaging 30 points and nearly 400 yards of total offense per game, but the Britons' lone score against the now 4-0 Bears didn't come until the 56th minute. Senior quarterback Brian Tatom and sophomore Bobby Collins scored touchdowns in the first half and Jonathan Feig booted a 29-yard field goal in the third quarter. Senior Kyle Runnalls had nine tackles, two interceptions and three pass breakups.

Cross country cruises at Southwest Baptist

The men's and women's cross country teams both captured the Southwest Baptist University Bearcat Invitational in Bolivar, Mo. The women's team placed first out of four teams with 18 points while the men's team placed first out of five teams with 17 points. Sophomore Emily Lahowetz captured the individual title with a time of 18:25. For the men, senior Pat MacDonald brought home top honors with a time of 25:59.

Men's soccer beats reigning UAA champs

The men's soccer team opened the University Athletic Association (UAA) slate with a key 2-1 road victory Sept. 23 over the defending UAA champs, Carnegie Mellon University. The Bears got the early lead in the seventh minute when senior Casey Lien scored his second goal of the season. Carnegie Mellon tied the score at 1-1, but freshman Josh Farber headed home his first collegiate goal in the 68th minute.

Women's soccer ties Carnegie Mellon, 2-2

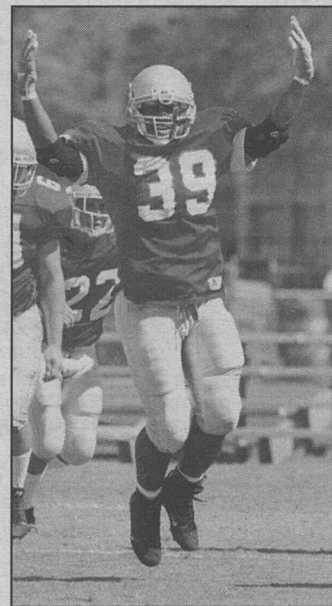
The women's soccer team played Carnegie Mellon to a 2-2 road draw Sept. 23 in the UAA opener for both. The Bears got goals from Megan Drews and Caroline Waggenspack. Neither team broke through in the two overtime periods despite several chances.

Volleyball sits at 16-0 after rattling off 4 wins

The volleyball team posted four wins to improve to 16-0 on the season. The Bears played Sept. 19 at Fontbonne College and pulled out a 3-0 win with scores of 30-28, 30-28, 36-34. Sophomore Katie Quinn led the Bears with 18 kills, while junior Rebecca Rotello had 45 assists and freshman Colleen Winter added 20 digs. The Bears extended their winning streak to 146 matches as they hosted the UAA Round Robin Sept. 22-23. The Bears pounced on the University of Chicago, 30-16, 30-19, 30-19; cruised past the University of Rochester, 30-20, 30-17, 30-19; and knocked down Case Western Reserve University, 30-15, 30-17, 29-31, 30-13.

Alvo excels, advances for men's tennis

Twelfth-seeded men's tennis player Brian Alvo defeated two nationally ranked players en route to winning the 2001 Intercollegiate Tennis Association (ITA) Men's Division III Central Region Championship at DePauw University in Greencastle, Ind., Sept. 22-24. With the win, Alvo qualified for the Small College Tennis Championships in Dallas Oct. 18-21. The tournament will consist of all eight regional champions.



Junior linebacker Brandon Roberts celebrates during the Bears' 17-7 home win over Albion College Sept. 22.

Tuesday, Oct. 2

Noon-1 p.m. WU Toastmasters for Oratorical Readiness event. Room 1140A, 4480 Clayton Ave. 286-0133.

Wednesday, Oct. 3

8 p.m. Tonda Traditional Japanese Bunraku Puppets. Co-sponsored by East Asian Studies, Washington U., and Center for International Studies U. of Mo., St. Louis. Cost: \$15 adults, \$11 senior citizens, and \$7 students (group pricing available). J.C. Penney Aud., U. of Mo., St. Louis. 935-4448.

Saturday, Oct. 6

7 a.m. Continuing Medical Education seminar. "New Techniques in Urinary Incontinence and Female Urology." Cost: \$250, lectures only; \$450, lectures and labs (includes breakfast and lunch). Eric P. Newman Education Center. To register, call 362-6891.

10 a.m. University College Science Saturdays. Physics at the Edge. "Quantum Physics Confronts Einstein's Gravity." Matt Visser, research assoc. prof. (Continues Oct. 13, 20 and 27.) Room 201 Crow Hall. 935-6759.

Monday, Oct. 8

7:30 a.m. STD/HIV course lecture and clinical practicum. Sponsored by St. Louis STD/HIV Prevention Training Center. (Also Oct. 9) Cost: \$65. Room 601A Becker Library. Registration required, 747-0294.

12:30 p.m. Women's soccer vs. Case Western Reserve U., Cleveland. Francis Field. 935-5220.

5 p.m. Football vs. Rhodes College, Memphis, Tenn. Francis Field. 935-5220.

Friday, Oct. 5

5 p.m. Men's soccer vs. NYU. Francis Field. 935-5220.

7:30 p.m. Women's soccer vs. NYU. Francis Field. 935-5220.

Sunday, Oct. 7

11 a.m. Men's soccer vs. Emory U. Francis Field. 935-5220.

1:30 p.m. Women's soccer vs. Emory U. Francis Field. 935-5220.

Wednesday, Oct. 10

4 p.m. Women's tennis vs. U. of Mo., St. Louis. Tao Tennis Center. 935-5220.

7 p.m. Men's soccer vs. Webster U. Francis Field. 935-5220.

And more...

Friday, Sept. 28

10 a.m. Visual Arts and Design Center symposium. "Al Parker: Innovator in American Illustration." (Continues with sessions at 1:15 and 4 p.m.) Steinberg Hall Aud. 935-5495.

Schindlers

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education from the University of Duesseldorf. He earned his doctorate in 1990 from the University of California, Irvine, in German literature and film.

Schindler then taught for a year at Princeton University before coming to Washington University. Wife Mary, who was born in the United States, works as a regional operations manager for a computer-based testing company.

"I like living in this country so much that after having taught this summer in Germany, I realized I felt more at home here than there," Schindler said.

While Schindler has plans to make his garden to be even better next year, he also has several items he would like to pursue while living on the South 40.

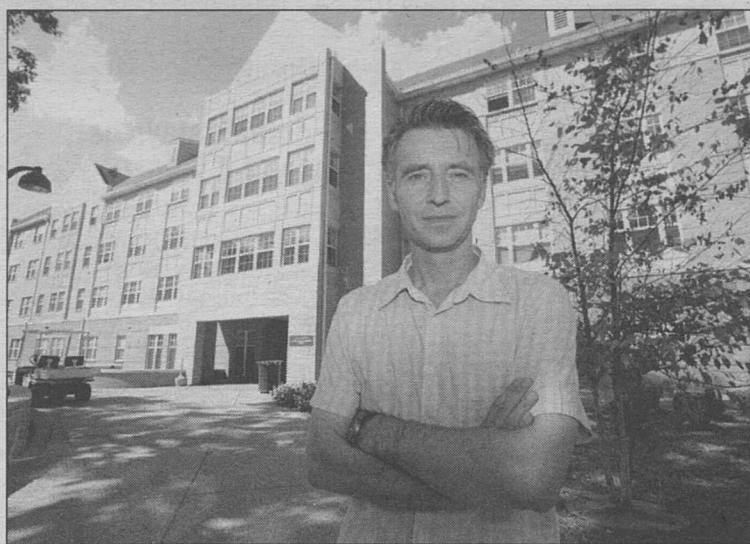
"The first thing is that I want to bridge the gap between the Hilltop and the South 40," he said. "That seems to be also an idea that comes from the students."

"I grew up with the idea that faculty were sort of off limits. However, many students seem to enjoy our presence on the South 40, for many reasons. I don't think it's so much that they need adults around, but they miss home."

To help bridge that gap, the Schindlers have started hosting a bi-weekly dinner for students. The couple also has a dog, Miles, and a cat, Lucy. Students can sign up to walk Miles if they'd like.

"Those things just help to make the transition from high school and living at home to living at a residential college a little easier," Schindler said. "We aren't replacing the family, but we can give the students a place for some security."

Another area Schindler would like to focus on is academics and



Stephan Schindler now lives in Danforth House with his wife, Mary. The Schindlers are the fourth faculty family to accept the University's invitation to live rent-free on the South 40.

"... many students seem to enjoy our presence on the South 40, for many reasons. I don't think it's so much that they need adults around, but they miss home."

STEPHAN SCHINDLER

how to bring academia to the South 40.

"There are already a lot of programs in place, like the Social Justice Center and other co-curricular activities," he said. "However, I realized we have to do that a lot more because students don't realize how much different college is from high school. They have to study a lot more, and they have to compete with other young people on the same level. They also have to learn a lot that is not taught in class."

Schindler already has been part of a discussion panel of professors at a South 40 orientation activity. He is also planning some time-management workshops; a trip to the Holocaust museum in St. Louis; tutoring help for some of the more difficult courses; help sessions in the dorms with

teaching assistants and professors; and a visit by several local jazz musicians to talk about the history of jazz in St. Louis.

"I also think the daily life presence makes a huge difference," Schindler said. "I have office hours in Danforth House. If the door is open, students can walk right in. One of our goals is to ensure the students that when they come from their classes back to the South 40 that there is someone there who can help them if they need it."

Schindler said he truly enjoys that kind of informal interaction between students and professors.

"It really shows students that professors are human beings, too," he said. "I don't have to have a tie on when I walk my dog. They get to see me in a T-shirt and shorts and realize that I'm just a regular guy."

Retirees

— from Page 1

great. We hope you remain involved with us," he said.

Four retirees were recognized with baskets of flowers for the greatest number of years of service of those present. Doris Jeanne Gibbons, former clinical laboratory manager, and Marian Rita Halpin, former assistant to the chair of the Department of Psychiatry, both retired after 34 years. Rosielee Neal, former histology technician, and Marlene O'Brien, former senior clinical lab technologist, both retired after 33 years of service. All four were from the medical school.

Other **medical school retirees** and their years of service are: Anna C. Becker, 12 years; Diana A. Bose, 13; Judith Carol Bronakowski, 16; Josie Lee Cozart, 10; Ann Elizabeth Delaney, 12; Rosemarie Fink, 11; Douglas G. Fishel, 21; Harriett D. Green, 12.

Patricia Anne Hammond, 18 years; Richard Henderson, 11; Anna L. Johnson, 23; Kenneth K.

Kaiser, 24; Betty A. Kilbreath, 23; Xi Yang Li, 13; Anna Jane Mann, 28; Orlando J. Moncada, 20; Dianne Marie Parker, 19; Sandra Ann Paul, 10; Karen H. Perks, 16; Mathew James Poe, 11; Floyd Joseph Reiser, 15.

Randall Dewey Rhodes, 29 years; Shirley Mae Scott, 15; Myrna B. Sokolik, 11; Laraine Jean St. John, 17; Geraldine V. Strutman, 12; Ozell Thomas Jr., 33, and Charlotte Walsh, 10.

In addition to Karen Baker, the **Hilltop Campus retirees** and their years of service are: Gisela Ahadi, 21 years; Ruth A. Bebermeyer, 10; Mary M. Constantin, 13; Therese J. Dent, 12; Joyce A. Edwards, 29.

Maureen M. Gallagher, 10 years; Suzanne Goodman-Sherman, 11; Felton Hibbler, 30; Melvin L. Hughes, 11; Joe L. Kastner, 34; Judith C. Knese, 13; Steven Charles Kraushaar, 18; Donald A. Lalumandier, 31; Isaida I. Lee, 27.

William F. Lobdell, 32 years; Ann Panhorst, 25; John Paul Pirozzi, 16; Mary Ellen A. Powers, 31; James H. Price Sr., 13; Jane Smith, 18; Patrick Dennis Swan, 31; J. Michael Touhey, 18; and Victoria Witte, 22.



Karen Baker, former manager of faculty records, receives her award for 20 years of service from Michael R. Cannon (center), executive vice chancellor and general counsel, and Chancellor Mark S. Wrighton at the annual retirees' luncheon Sept. 19 at the Whittemore House.

Campus Watch

The following incidents were reported to University Police **Sept. 18-23**. Readers with information that could assist in investigating these incidents are urged to call **935-5555**. This information is provided as a public service to promote safety awareness and is available on the University Police Web site at police.wustl.edu.

Sept. 18

4:40 p.m. — A student used false identification to try to gain access to an event on fraternity row in early September. The card was originally confiscated by B&D Security and was forwarded to University Police. The incident will be referred to the Judicial Administrator.

Sept. 19

7:23 p.m. — A student reported that an unknown person stole her calculator from a table on

the main level of Olin Library. Total loss is valued at \$200.

Sept. 20

8:52 a.m. — A student reported that an unknown person stole his Trek Navigator 200 mountain bike from the bike rack on the north side of the Lee Residence Hall. The theft occurred between 8 p.m. Sept. 19 and 8:50 a.m. Sept. 20. Total loss is valued at \$300.

Sept. 22

1:22 p.m. — A contractor

working on campus reported that an unknown person removed a power saw, hammer drill, two levels and two rulers from his work area located on the first level of Olin Library. Total loss is valued at \$1,320.

Additionally, University Police responded to three reports of vandalism, and one report each of destruction of property, theft, drug offense and automobile accident.

Employment

Use the World Wide Web to obtain complete job descriptions. Go to <https://hr.wustl.edu/> (Hilltop) or <http://medicine.wustl.edu/wumshr> (Medical).

Hilltop Campus

Information regarding positions may be obtained in the Office of Human Resources, Room 130, West Campus. If you are not a WU staff member, call 935-9836. Staff members call 935-5906.

Research Technician 000256
Research Assistant 010023
Administrative Secretary 010032
Senior Medical Sciences Writer 010108
Senior Prospect Researcher 010236
Reference/Subject Librarian (Psychology) 010241
Reference/Subject Librarian (German) 010242
Catalog Librarian 010290
Regional Director of Development 010314
Custodian and Maintenance Assistant (part time) 010349
Associate Director, BSBA Advising and Student Services 010375
Reference/Subject Librarian 010387
Assistant Director Corporate/Foundation Prospect Management Systems 010398
Department Secretary 010404
Serials Librarian 010415
Director of External Programs 020001

Regional Director of Development 020005
Government Grants Specialist II 020020
Grants Coordinator 020033
Career Center Project Leader 020039
Supervisor of Gift Acknowledgements 020042
Receptionist 020043
Administrative Assistant 020044
Departmental Secretary 020045
Service Representative 020051
Lab Technician 020052
Media/Editorial Advisor (part time) 020053
Research Technician 020054
Administrative Assistant 020059
Director of Development 020061
Director of Annual Giving Programs 020064
Senior Site Operator 020065
Director of Parent Programs 020066
Director, International Alumni & Development Programs 020067
Library Technical Assistant 020068
Working Supervisor (Bargaining Unit Employee) 020069
Student Records Administrator 020070
Working Supervisor (Bargaining Unit Employee) 020072
Lab Technician 020073

Coordinator, Professional and Graduate Program Preparation 020076
Administrative Secretary 020079
Word Processing Operator 020080
Purchasing Coordinator 020081
Graduate and Joint Degree Program Assistant (part time) 020084
Accounts Payable Coordinator 020085
Planned Giving Officer 020086
General Laboratory Assistant (part time) 020088
Application Processor (part time) 020089
Research Compliance Specialist 020090
Project Associate 020092
Senior Shelving Assistant 020093
Music Library Assistant (Technical Services) 020094
Senior Prospect Researcher 020095
Instructional Technology Specialist 020096
Administrative Assistant/Receptionist 020098
Coordinator of Events and Volunteers 020099
Federal Loan Coordinator 020100
Coordinator for Undergraduate Administrative and Technical Activities 020101
Research Assistant (part time) 020103

Research Assistant 020104
Manager, Sponsored Projects Accounting 020105
Administrative Assistant 020106
Plant Care Assistant (part time) 020107
Lab Technician 020108
Research Assistant 020109
Deputized Police Officer 020111
Deputized Police Officer 020112
Administrative Manager 020113
Office Assistant (part time) 020114

Medical Campus

This is a partial list of positions at the School of Medicine. Employees: Contact the medical school's Office of Human Resources at 362-7196. External candidates: Submit resumes to the Office of Human Resources, 4480 Clayton Ave., Campus Box 8002, St. Louis, MO 63110, or call 362-7196.
Grant Assistant III 020008
Audiovisual Technician 020347
Secretary III 020353
Supervisor, Clinical Office 020359
Senior Research Technician 020361
Insurance Billing and Collection Assistant II 020402



True musical pleasure The CarolBeth True Trio — (from left) CarolBeth True, piano; Jay Farmer, bass; and Alan Schilling, drums — performs Sept. 20 for the Jazz at Holmes series. Performances are held in a coffeehouse setting every Thursday night during the semester in Holmes Lounge in Ridgley Hall and are free and open to the public. For more information, call 935-4841.

Notables

Introducing new faculty members

The following are among the new faculty members on the Hilltop Campus. Others will be introduced periodically in this space.

Raj Mashruwala, assistant professor of accounting in the Olin School of Business, comes from the University of Texas at Dallas, where he taught accounting information systems, cost management, and accounting for managers. Among his research interests are the role of nonfinancial measures in performance management measurement, business value models, executive labor and capital markets and the impact of information technology on performance. Mashruwala earned a bachelor's degree in engineering in 1991 from the L.D. College of Engineering at Gujarat University in India, a master of business administration in 1995 from the S.P. Jain Institute of Management and Research in India and is a doctoral candidate in management science at the School of Management at the University of Texas at Dallas.

Christopher Alan Bracey, J.D., joins the School of Law as an associate professor. Most recently, he was a visiting assistant professor at Northwestern University School of Law. His areas of expertise are civil procedure, advanced criminal procedure and race-relations law. Bracey earned a bachelor's degree from the University of North Carolina at Chapel Hill in 1992. In 1995, he earned a juris doctorate from Harvard University School of Law, where he served as supervising editor of the Harvard Law Review and as general editor for the Harvard Civil Rights-Civil Liberties Law Review and the Harvard Blackletter Journal.

F. Scott Kieff, J.D., joins the School of Law as an associate professor. Most recently, he was a visiting assistant professor at Northwestern University. The co-author of two books on patent law, Kieff's research interests also include technology law and business, intellectual property, contracts, antitrust and complex litigation. In 1991, he earned a bachelor's degree in biology from the Massachusetts Institute of Technology, where he received a two-year National Science Foundation fellowship for research in molecular genetics at the Whitehead Institute. In 1994, Kieff earned a juris doctorate from the University of Pennsylvania Law School.

Troy A. Paredes, J.D., joins the School of Law as an associate professor. Most recently, he was an associate at the firm Irell and Manella LLP in Los Angeles. His research interests include corporations, corporate finance, securities, property and antitrust. Paredes earned a bachelor's degree in economics from the University of California, Berkeley, in 1992. He earned a juris doctorate in 1996 from Yale University School of Law, where he was an Olin Fellow in Law and Economics and a Coker Fellow. He also served as submissions editor for the Yale Journal on Regulation.

By ANN NICHOLSON

GWB to present annual awards at banquet

The George Warren Brown School of Social Work (GWB) will present its annual distinguished alumni awards, Distinguished Faculty Award, Dean's Medal and President's Award at a Sept. 29 banquet at the St. Louis Art Museum Cafe.

The 2001 Distinguished Alumni Award recipients are David L. Cronin (M.S.W. '60) and Paula M. Gianino (M.S.W. '83). The awards honor alumni who have attained distinction in their careers and share the characteristics of leadership, progressive thinking, high standards, uncompromising integrity, commitment, courage and confidence.

The 2001 Distinguished Faculty Award recipient is Arlene R. Stiffman (M.S.W. '75, Ph.D. '80), the Barbara A. Bailey Professor of Social Work. The award recognizes a faculty member who displays dedication and distinguished service to the school, including exemplary responsiveness to students, scholarly activity, research capabilities, academic honors and service to the community.

The 2001 President's Award recipient is Sima K. Needleman (M.S.W. '74). This award recognizes long-standing and distinguished commitment to the Alumni Association, as well as exemplary work in bringing together alumni, faculty and students.

E. Desmond Lee (B.S.B.A. '40) will receive the 2001 Dean's Medal, which is awarded to special friends whose dedication and service to the school have been exceptional. By providing sound advice, pursuing high objectives and inspiring the enthusiasm and support of others, these friends have made significant differences to the school and greatly enhance its progress.

Cronin, Ph.D., served GWB for 25 years, most recently as associate dean for administration before retiring in July. He currently serves the school part-time as special assistant to the dean.

Cronin's professional interests include child welfare supervision and practice, information and referral services, board volunteerism, and mental-health programming. Among his achievements at GWB, he directed the construction of Goldfarb Hall and the renovation of Brown Hall, chaired GWB anniversary celebrations and played a major role in the school's reaccreditation. He and his wife, Harriet K. Switzer, Ph.D., secretary to the University Board of Trustees, were instrumental in establishing the Kathryn M. Buder Center for American Indian Studies.

Gianino has served as president and chief executive officer of Planned Parenthood of the St. Louis Region (PPSLR) since 1991. A 1993 recipient of the Social Worker of the Year Award from the Missouri Chapter of the National Association of Social Workers, Gianino is a tireless leader and outspoken advocate for reproductive freedom, family planning and universal access to related educational programs and services.

At PPSLR, she is responsible for establishing and leading the strategic vision and plan for the region's oldest and largest nonprofit gynecologic, reproductive and sexual-health-care provider. Her contributions to GWB have included serving as a

field instructor and on faculty advisory committees.

Stiffman serves as director of GWB's Comorbidity and Addictions Center, the first addictions research center funded by the National Institute on Drug Abuse at a school of social work. Recognized for her landmark research in the field of mental-health-services for adolescents, Stiffman is one of the few social workers to receive the prestigious Research Scientist Career Award from the National Institute of Mental Health.

Her work has been published widely in leading academic journals, and she is the co-editor of seven books, including "Ethnic Issues in Adolescent Mental Health and Advances in Adolescent Mental Health: Volume I-IV." Stiffman joined GWB's faculty in 1980, worked as a researcher for the School of Medicine's Department of Psychiatry from 1985-86, and then returned to GWB. An active member of the St. Louis community, Stiffman has

served on various boards and committees of the Jewish Federation.

Needleman found her niche in medical social work, particularly in the area of women's health. From 1976-92, she was a medical social worker at Jewish Hospital of St. Louis (now Barnes-Jewish Hospital), specializing in serving patients with obstetrical problems. In 1983, Needleman began providing counseling and social service support to patients in the hospital's In Vitro Fertilization Clinic.

From 1992 until her retirement in 1999, she worked in private practice, serving patients with pregnancy-related problems. A member of GWB's National Council, Needleman served 10 years on the GWB Alumni Board, where she chaired numerous committees and served as president from 1993-95. She also was a practicum instructor for GWB while at Jewish Hospital. She now coordinates a monthly alumni focus group called "Healing Racism."

Lee, former chairman of Lee/

Rowan Co., which he co-founded in 1939, is passionately committed to helping others. Through his widespread philanthropic efforts, he seeks to encourage community and regional partnerships to collaborate and to better educate people of all ages and economic backgrounds.

Lee's many gifts include the establishment of the E. Desmond Lee Professorship for Racial and Ethnic Diversity at GWB and other chairs at the University. Having attended the University on a basketball scholarship and lettered in track and basketball, he was inducted into the Washington University Sports Hall of Fame in 1999.

Among his other awards from the University, he received an honorary doctorate, the Robert S. Brookings Award and a Distinguished Alumni Award from the John M. Olin School of Business. Lee also has received numerous accolades from the St. Louis community for his humanitarian and philanthropic efforts.

Obituaries

Margo E. Trump, 59, registrar at School of Art; memorial service Oct. 1

By SUSAN KILLENBERG MCGINN

As the School of Art registrar, Margo E. Trump was on top of most everything that went on at the school; or as Dean Jeff Pike often said, "She is registrar and master of the known universe."

Trump died Wednesday, Sept. 19, 2001, in Irvine, Calif., after a long illness. She was 59.

A memorial service will be held at 11 a.m. Oct. 1 in Graham Chapel, followed by a reception for family and friends in the Women's Building formal lounge.

Trump joined the School of Art staff in 1985 as the student records auditor and was named student records coordinator in 1986. She became the school's registrar in 1988 and held the position until the time of her death.

For 15 years, Trump had been a mainstay of the school's academic programs, handling almost all of the students' records, testing new computer systems to upgrade the record-keeping process, organizing orientation, award assemblies and commencement activities, and probably most importantly to the students, taking an active role in their lives.

"Margo was the students' great advocate," Pike said. "She knew

how to get the necessary task at hand accomplished, while understanding the task's context: Her mastery of the details never clouded her grasp of the larger goals of the school. Those of us who had the pleasure of working with her know just how hard she strived to ensure that the students and the school were well-served. "Margo Trump was my friend and colleague," Pike added. "I miss her terribly."

Her office was adorned with a collection of artwork given to her by former students over the years, and at Commencement, graduating students would rise and applaud loudly when her name was called during the school's recognition ceremony.

"There are no words to describe the loss of Margo Trump," said Jeffrey Golubchick, a senior in the School of Art and president of the Art School Council. "Margo was more than the master of the known universe to me; she was my friend. No matter how busy Margo was, she always had an open door and a warm heart."

"I could not imagine my freshman and sophomore years without Margo's guidance. Margo Trump will be missed with fond affection, but I will always

remember her with even greater sincerity."

Jeffrey Lancaster, a sophomore in the School of Art, echoed Golubchick's thoughts.

"No student has passed through the halls of Bixby without being profoundly influenced by Margo's presence," Lancaster said. "She was always willing to give of her own time in order to resolve student concerns — whether about scheduling or life in general. Her warmth, laughter and mentorship will be missed."

In addition to her service to the school and its members, she has served on many University committees, including the School of Art Dean's Search Committee (1999-2000); the Academic Calendar Committee; and a lengthy term on the Undergraduate Council.

Trump graduated from David Lipscomb College in Nashville, Tenn., in 1962 and attended Brown's Business and Secretarial College in St. Louis from 1973-74.

She is survived by her stepfather, Ken Kelly; two children, Bret Trump, a 1994 School of Art alumnus, and Shannon Trump Becker; and two grandchildren.

Service for Richard Brunell; son David to perform memorial concert

The School of Art will host a memorial service for longtime faculty member Richard Brunell (May 26, 1916-Dec. 7, 2000) from 1-2:30 p.m. Oct. 6 in Graham Chapel.

Speakers include William H. Danforth, chancellor emeritus and vice chairman of the Board of Trustees; Jeff Pike, dean of the School of Art; and several alumni who studied with Brunell.

In addition, Brunell's son, pianist David Brunell, professor of music at the University of Tennessee, will perform a concert in memory of his father at 8 p.m., also in Graham Chapel. The concert is free and open to the public.

Richard Brunell taught graphic design at the School of

Art for more than 20 years. A pilot during World War II, he took aerial reconnaissance photos, including the first photo of Adolf Hitler's mountain retreat — an image that was reproduced in newspapers around the world.

After the war, Brunell earned a bachelor of fine arts degree from the Rhode Island School of Design and a bachelor's in art history from Brown University in 1949. After working professionally for several advertising agencies, he served as dean of the Atlanta Art Institute and the Kansas City Art Institute before arriving at Washington University in 1960. He was named professor emeritus in 1982.

For the memorial concert, David Brunell will perform works

his father admired, including Beethoven's "Sonata in C Minor, Op. 13 (Pathétique)"; Gershwin's "The Man I Love" and "I Got Rhythm"; and Ravel's "Jeux d'Eau." In addition, Brunell will perform one work — "Contrails" — that was composed by his father, himself a talented jazz and classical pianist.

"The title is short for 'condensation trails' and refers to the trails left by airplanes such as the one my dad flew in the war," Brunell said. "Although he never wrote it down, my mother recorded it and I recently was able to learn it from the recording."

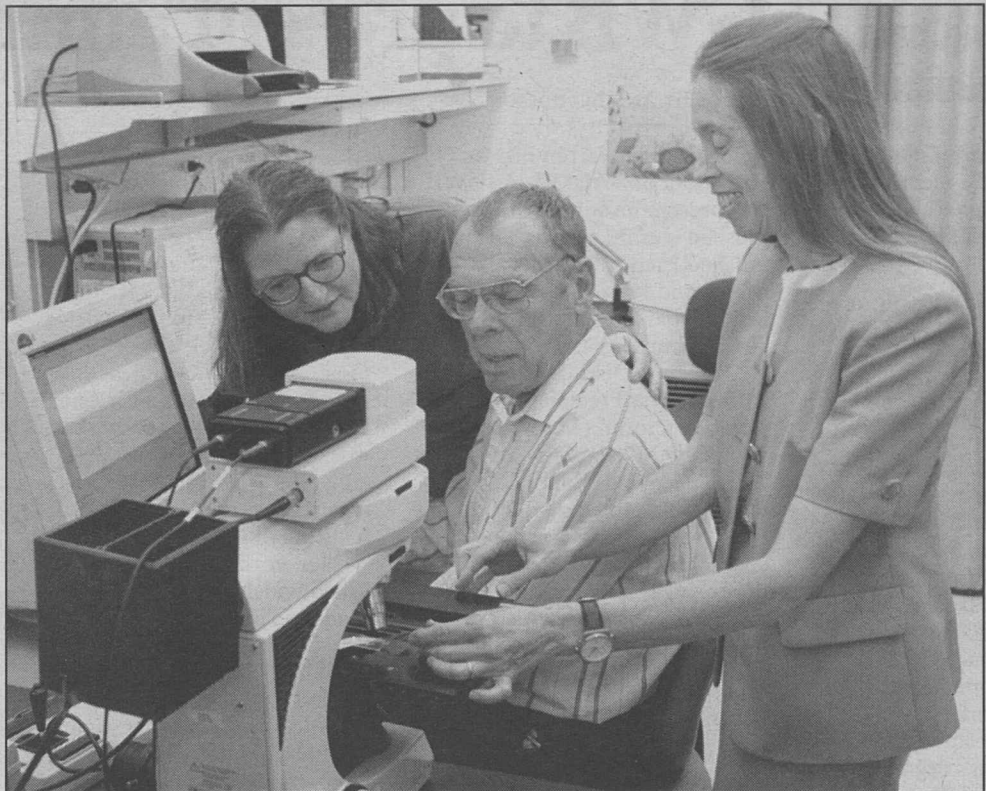
For more information about either the service or the concert, call 935-6500.

Washington People

Jill Dill Pasteris, Ph.D., professor of earth and planetary sciences in Arts & Sciences, began her geology career studying rocks from the Earth's mantle and today is making fascinating discoveries about bone, teeth and minerals on the sea floor. She has traversed this less-traveled road thanks to a vehicle that has brought her prominence across disciplines and nations as well.

The vehicle is a spectroscopic instrument called the laser Raman microprobe. It yokes a powerful microscope and an equally potent laser, allowing Pasteris and her colleagues to analyze minerals and other particles in the micrometer range — that's one-millionth of a meter.

As a young geologist, Pasteris learned to appreciate the power of microscopy from her professors at Bryn Mawr College and from a legendary master, Paul Ramdohr of the University of Heidelberg, Germany. Thanks to a 1974 Fulbright Fellowship, she spent a year working with him. That was between finishing her bachelor's degree at Bryn Mawr and



(From left) Research scientists Brigitte Wopenka, Ph.D., and John Freeman, Ph.D., work with Professor Jill D. Pasteris, Ph.D., all in earth and planetary sciences in Arts & Sciences, to load a sample for analysis by the laser Raman microprobe in Pasteris' McDonnell Hall laboratory.

Brewer of MBARI, Pasteris and her colleagues now are testing a fiber-optic, portable Raman spectrometer that MBARI will place inside its remotely operated vehicle on the sea floor at several kilometers depth.

The scientists want to examine clathrate hydrates, which are ice-like solids that trap gas molecules such as greenhouse

gases methane and carbon dioxide. Understanding how these solids encapsulate the greenhouse gases could lead to the safe storing of unwanted greenhouse gases on the sea floor.

Pasteris has been honored many times for her teaching, including the 1995 Emerson Electric Excellence in Teaching Award and the 1995 Faculty Teaching Award presented by the University's Council of Students of Arts & Sciences. She regularly teaches the undergraduate courses "Earth Materials" and "Resources of the Earth," plus the graduate course "Environmental Mineralogy."

"I try to tell my students that there is power in learning the fundamentals because they are launching pads," Pasteris said. "We see a lot of our research taking advantage of the fundamental things we've learned."

"Jill Pasteris is a superb researcher and teacher," said Raymond E. Arvidson, Ph.D., the James S. McDonnell Distinguished University Professor and chair of earth and planetary sciences. "She is involved in a wide array of studies using the Raman spectrometers in her lab as the focus. She consistently receives great comments from students in her courses as someone who cares about teaching and cares about students, in addition to being someone who excels in explaining difficult concepts in ways that are understandable."

Pasteris and her husband, Arthur, have two daughters, Jennifer and Jessica, fraternal twins and sophomores at Ladue Horton Watkins High School. Her daughters tend toward sports and the arts more than sciences, unlike their mother, who caught the geology bug at an early age.

Her interest was fostered by an unusually challenging ninth-grade science class that focused on geology, and by her father, Lloyd Dill, an engineer who traveled weekly to sell pneumatic and hydraulic equipment. Her father found the time and energy to transport his daughter about 100 miles away from their home in King of Prussia, Penn., to a rock and mineral club in New Jersey where Pasteris hiked, climbed and gathered specimens on many a weekend.

"Rocks were always very interesting to me," Pasteris said. "Look around and you see them in all different colors and shapes and formations. I started with a basic interest and enthusiasm, and I've never stopped being fascinated. I've always been launched into the next level of inquiry."

Novel applications of technology

Jill D. Pasteris, Ph.D., has broken new ground through her studies using the laser Raman microprobe

By TONY FITZPATRICK

enrolling in the doctoral program in geology at Yale University.

"At Heidelberg, I looked at all sorts of ore deposit rocks under the microscope," said Pasteris in her third-floor McDonnell Hall office. "Dr. Ramdohr suggested I get more specific in my interest, and I chose South African kimberlites."

Kimberlites are rocks from which diamonds are recovered. They are found deep in the Earth's mantle, some 100 to 120 miles below the Earth's surface. Pasteris studied kimberlites and noticed tiny, micrometer-sized packets of fluid known as fluid inclusions trapped within some of the minerals.

"I asked: Wouldn't these fluids be guides to help us understand what's going on and how the diamonds are stabilized?" Pasteris said. "You might think of cracking open the minerals and extracting the fluids, but this leads to contamination. The laser Raman microprobe, however, lets you take a laser beam and drop it right on the inclusion you're looking at. It's remarkable. You don't have to mess up the sample."

Pasteris came to Washington University in 1980. Within three years, with help from the University, the National Science Foundation, Monsanto Co. and others, she bought a laser Raman microprobe, the first one in the country to be deployed in a geology department. Since then, she has purchased two others that have greater capabilities.

Initially, Pasteris used the Raman microprobe to analyze those minute fluid inclusions in rocks from the mantle that had first captured her interest. She and

her colleagues then broadened their studies to various chemical reactions among melts, fluids and rocks. For instance, they used Raman spectroscopy to try to understand the 1991 eruption of Mt. Pinatubo in the Philippines.

In the mid-1990s, Pasteris and her group, which includes earth and planetary sciences

research scientists Brigitte Wopenka, Ph.D., and John Freeman, Ph.D., wizards with the Raman microprobe, began their travels down yet a different road. They were approached by Harry Brandon, D.Sc., research assistant professor of plastic surgery who also is a mechanical engineer. He asked if she and her group could apply the laser Raman microprobe to analyze minerals in human tissue. Not just any tissue, but tissue that had been adjacent to silicone breast implants.

The project came about because of claims by a pathologist that the polymer silicone had degraded in the body to form a crystalline silica material that, as Pasteris explained, a geologist would call quartz. The pathologist believed that this was one of many problems that made the women feel ill.

"When Harry suggested collaborating, I thought that it sounded a lot like what we do with rocks," Pasteris said. "In either rock or tissue, we can analyze minerals. We thought it could work."

The kind of microscopy that the pathologist used was not as detailed or definitive as that of the laser Raman microprobe.

"Essentially," Pasteris explained, "all he could provide was an inference from his optical observations. In contrast, the Raman microprobe could provide definitive spectra of microparticles no more than a couple of micrometers in diameter that would be a fingerprint of the minerals."

Brandon's collaborator, V. Leroy Young, M.D., the William G. Hamm Professor of Plastic Surgery, provided samples of breast tissue both from women with and without silicone breast implants.

"We found various particles in both types of tissue," Pasteris said. "One thing we realized is that it's essentially impossible for silicone to spontaneously convert to quartz. The most common thing we found in both types of tissue was calcite — that's what Tums are made of, and clamshells, too. There was no evidence of different kinds of solids in implants versus the control group. But we did find evidence that some silicone did indeed leak into the tissue."

The Pasteris group's study began four years ago and is

concluded now, but "it launched us into researching biominerals," Pasteris said.

Pasteris and her group now collaborate with Matthew J. Silva, Ph.D., assistant professor of orthopaedic surgery, on the material properties of bone.

"We have a great collaboration with Matt, as we have had with Harry and Leroy," Pasteris said. "Matt's background is in mechanical engineering, and he wanted to know more about the mineral composition of bone and what it is that makes bone so very strong yet very flexible."

Bone is dominated by apatite, a calcium phosphate mineral occurring in crystalline grains on the order of tens of nanometers (billionths of a meter) in size. The grains are bound by ordered networks of collagen fibers, protein that comprises between 20 and 30 percent by weight of bone. Pasteris and her collaborators are making inroads into understanding the intricately complex relationship between the mineral grains, collagen fibers and mineral-collagen interfaces that give bone its extraordinary mechanical properties.

"We're fascinated by how all of this comes together," Pasteris said. "While bone is dominated by minerals, it's not frequently looked at the way a geological product would be. It's a wonderfully bioengineered material."

One of the fascinations of bone is the nano-size of the apatite crystals. Some process in the body prevents the apatite crystals from becoming larger. It's already been shown that if the apatite crystals can be chemically changed, bone strength changes, a principle that might someday lead to a therapy for osteoporosis and other bone diseases.

"The fact that the crystals grow no larger suggests that there's a reason for this and makes me wonder how the body keeps them from growing larger," Pasteris said. "These are the kinds of questions that mineralogists can address."

Raman spectroscopy is a vehicle that most recently has led Pasteris and her group to the sea floor. They have collaborated with biologists at the Monterey Bay Aquarium Research Institute (MBARI) in California to analyze the kind of sulfur that unusual bacteria oxidize on the ocean floor. With oceanographer Peter

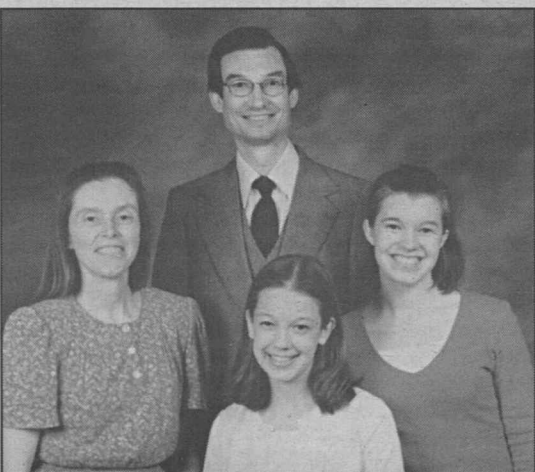
Jill D. Pasteris, Ph.D.

Born: Philadelphia

Title: Professor of earth and planetary sciences in Arts & Sciences

Family: Husband, Arthur; daughters, Jennifer and Jessica

Hobbies, pastimes: Hiking each summer with the family in Colorado; reading, as time allows, science fiction and popular science journals such as *Science News* and *Scientific American*; listening to classical music



The Pasteris family (clockwise from left): Jill, Arthur, and fraternal twins Jessica and Jennifer.